UNITED STATES PATENT AND TRADEMARK OFFICE

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10/551,485	06/21/2006	Pie Yen Chia	NIHE-38824	4154

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PEARNE & GORDON LLP
1801 EAST 9TH STREET
SUITE 1200
CLEVELAND, OH 44114-3108

EXAMINER
KHAN, MEHMOOD B

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NOTIFICATION DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>21 June 2006</u>.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-39</u> is/are pending in the application.

     4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-39</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

     a)☒ All   b)☐ Some * c)☐ None of:

         1.☒ Certified copies of the priority documents have been received.

         2.☐ Certified copies of the priority documents have been received in Application No. _____.

         3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

     * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>06/16/2008, 06/06/2008, 04/30/2008 & 09/29/2005</u>.

4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____ .

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 4 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 4 recites the limitation "the tunneling". There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 4, 6-11, 14-22, 29-36 are rejected under 35 U.S.C. 102(b) as being anticipated by Minde et al. (WO 00/33511 herein Minde).

Claim 1, Minde a communication system for achieving end-to-end Quality of Service in a mobile network using terminal centric control **(Pg 3: 22-27, where Minde discloses end-user quality of service)** comprising: Minde discloses a terminal with QoS control module that is capable of performing QoS monitoring, reporting and enforcement **(Pg 4: 3-6, where Minde discloses measuring and reporting; Pg 4: 9-12, Pg 10: 10-13, where Minde discloses sending commands to the endpoints)**;

Minde discloses a central controller that accepts QoS reports from the terminal and

gives QoS enforcement instructions to the QoS control module in the terminal **(Pg 4: 1-**

12, Pg 6: 5-9, where Minde discloses analysis of reports and sending commands

by a service quality supervisor (SQS)); Minde discloses a central database that

stores subscription information of a user who uses the terminal and service level

agreement information **(Pg 11: 6-13, where Minde discloses a predetermined**

threshold for the user, Minde inherently discloses a central database).

Claim 4, as analyzed with respect to the limitations as discussed in claim 29.

Claim 6, Minde discloses a monitoring node in the network where the terminal is

attached to that would report network information relevant to the terminal to the central

controller **(Pg 7: 22-24, where routers, i.e. nodes, report link parameters)**; Minde

discloses an enforcement node in the network where the terminal is attached to that

would carry out enforcement command from the central controller to provide service to

the terminal **(Pg 11: 11-15, where Minde discloses adjusting parameters based on**

reports).

Claim 7, as analyzed with respect to the limitations as discussed in claim 1.

Claim 8, Minde inherently discloses wherein the QoS control module in the

terminal further comprises a local database for storing the collected QoS information

(Pg 7: 10-15, where Minde discloses reports on link and device parameters).

Claim 9, as analyzed with respect to the limitations as discussed in claims 7 and

8.

Claim 10, Minde discloses wherein the Communication Module comprises:

means for packing the QoS information in a known format before sending the QoS

information to the central controller **(data communication thus a header and**

payload); Minde inherently discloses means for parsing QoS enforcement information

received from the central controller **(payload portion of a packet)**; Minde discloses

means for updating terminal state based on the QoS enforcement information received

from the central controller **(Pg 11: 10-15, where Minde discloses changing one or**

more device parameters); Minde discloses means for initiating the enforcement

module to perform a relevant correction in the enforcement information received from

the central controller if necessary **(Fig. 9: 915, where Minde discloses adapting the**

service).

Claim 11, as analyzed with respect to the limitations as discussed in claim 10.

Claim 14, as analyzed with respect to the limitations as discussed in claim 1.

Minde discloses QoS control module also performs local enforcement decisions within

itself **(Pg 6: 6, where Minde discloses measuring device parameters)**.

Claim 15, Minde discloses a step where the central controller updates the central

database about the terminal's status **(Pg 11: 19-22, where Minde discloses previous**

reports from terminals; Minde discloses a step where the central controller retrieves

terminal information from the central database for QoS management **(Pg 11: 19-22,**

where Minde discloses using a previously received report).

Claim 16, as analyzed with respect to the limitations as discussed in claim 6.

Claim 17, as analyzed with respect to the limitations as discussed in claim 5.

Claim 18, as analyzed with respect to the limitations as discussed in claim 5.

Claim 19, as analyzed with respect to the limitations as discussed in claim 14.

Claim 20, as analyzed with respect to the limitations as discussed in claim 10.

Claim 21, as analyzed with respect to the limitations as discussed in claim 8.

Claim 22, Minde discloses a step of computing and setting threshold and

boundary values for triggering monitoring events at the terminal **(Fig. 4: 420)**; Minde

discloses a step of triggering violation events when violation is detected at the terminal

(Fig. 4: 420, YES); Minde discloses a step where triggering non-violation events for

non-violation monitoring events at the terminal **(Fig. 4: 420, NO)**, whereby the

monitoring module of the QoS control module at the terminal performs traffic monitoring

(Fig. 4: 405, 425, 430).

Claim 36, Minde inherently discloses wherein a data format for reporting information from the terminal to the central controller includes: message ID to distinguish the different incoming messages **(Fig. 1: end terminals, where Minde discloses different terminals that report QOS)**; Minde does not explicitly disclose message length to indicate length of the entire message for reporting status **(Official notice is taken on message length)**; Minde discloses QoS reporting data including attribute value pair that contain the QoS type and its value **(Pg 7: 10-11, where Minde discloses device parameters and link parameters, i.e. DP and LP)**.

Claim 29, as analyzed with respect to the limitations as discussed in claim 1. Minde discloses a step of computing a threshold value of QoS metrics that needs to be monitored **(Fig. 4: 425)**; a step of performing local QoS adjustment to the terminal if the measurement of the QoS metrics is not within the valid range of the threshold value as computed **(Pg 8: 26-27, Fig. 4: 430, where Minde discloses an adapt service command)**; Minde discloses a step of collecting QoS information and usage and adjustment statistics at the terminal **(Pg 7: 10-28, Fig. 3: EuQoS, where Minde discloses collection of device and link parameters and EuQos)**; Minde discloses a step of sending the QoS information in a predetermined report format to the central controller **(Pg 7: 10-28, Fig. 4: 420, sending the information to the SQS)**; Minde discloses a step of receiving of QoS enforcement feedback from the central controller **(Fig. 5: 525, where Minde discloses Adapt Service)**; Minde discloses a step of performing correction based on the feedback from the central controller **(Pg 11: 10-15, where Minde discloses an Adapt Service command and implementation of the command)**.

Claim 30, as analyzed with respect to the limitations as discussed in claim 4.

Claim 31, Minde discloses wherein packet transmission at terminal is delayed for the local QoS adjustments to the terminal **(Pg 16: 6-7, where Minde discloses data rate)**.

Claim 32, Minde discloses wherein packet is dropped at the terminal for the local QoS adjustments to the terminal **(Pg 1: 22, where Minde discloses loss of packets)**.

Claim 33, as analyzed with respect to the limitations as discussed in claim 31.

Claim 34, Minde discloses wherein request for receiving channels is reduced at terminal for the local QoS adjustments to the terminal **(Pg 7: 26-27, where Minde discloses bandwidth)**.

Claim 35, Minde discloses wherein transmission session initiated by the terminal is gracefully self-terminated for the local QoS adjustments to the terminal **(Pg 7: 15-18, where Minde discloses making measurements while receiving)**.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 2, 3, 5, 12, 13, 23-28 and 37-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Minde in view of Immonen et al. (US 2002/0132611 herein Immonen).

Claim 2, Minde discloses a policy control framework that is capable of carrying management decision to network nodes for service and QoS enforcement **(Pg 10: 1-14, where Minde discloses supervision of the network based on reports and sending dynamic adaptation to the endpoints)**; Minde discloses billing **(Pg 16: 23-24, where Minde discloses)**.

Minde does not explicitly disclose a security control framework that is capable of authenticating the user, authorizing the service and resources and collecting accounting information based on the user's subscription information.

In an analogous art, Immonen discloses a security control framework that is capable of authenticating the user, authorizing the service and resources and collecting accounting information based on the user's subscription information **(0011, where Immonen discloses authentication and billing and protocol signaling)**. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Minde to use authentication and billing as taught by Immonen so as to use the cellular network for billing purposes **(0011)**.

Claim 3, as analyzed with respect to the limitations as discussed in claim 13.

Claim 5, Minde does not explicitly disclose a proxy node that would securely forward messages from the terminal to the central controller in its home domain according to domain information provided by the terminal when the terminal is not directly attached to the home domain; and a proxy node that would securely forward messages from the central controller to the terminal.

In an analogous art, Immonen discloses a proxy node that would securely forward messages from the terminal to the central controller in its home domain according to domain information provided by the terminal when the terminal is not directly attached to the home domain **(0078, where Immonen discloses a Public Access Gateway transmits signals to the cellular network)**; Immonen discloses a proxy node that would securely forward messages from the central controller to the terminal **(0078, where Immonen discloses a Public Access Gateway receives signals from the cellular network).** Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Minde to a public access controller as taught by Immonen so as to allow control of the QoS of terminal when it roams to a WLAN **(0086)**.

Claim 12, Minde does not explicitly disclose wherein the enforcement module comprises at least any one of the following means: means for classifying packets into different priorities within the terminal; [means for managing dropping of packets within the terminal when resource quota allocated to the terminal is used up; means for reducing congestion at the terminal by lowering a transmission rate; means for reducing congestion at the terminal by delaying transmission of packets when insufficient resource is allocated to the terminal; means for terminating sessions and stopping

transmission of packets; means for reducing outgoing traffic by limiting total number of

outgoing sessions; means for reducing incoming traffic by limiting total number of

incoming sessions; and means for reducing incoming traffic by requesting for less

incoming traffic.]

In an analogous art, Immonen discloses means for classifying packets into

different priorities within the terminal **(0080, Fig. 4: CL, where Immonen discloses**

classification of IP packets). Therefore, it would have been obvious to one of ordinary

skill in the art at the time the invention was made to modify Minde to use classification of

packets as taught by Immonen so as to mark packets on the Ethernet level **(0080)**.

Claim 13, Minde does not explicitly disclose wherein the central database stores;

information on QoS profile of each individual user's subscription information; information

on status of the individual terminal; information on service agreements between

networks; information on status of the network providing service to the terminal; and

information on policy handling mechanism for QoS management.

In an analogous art, Immonen discloses wherein the central database stores

information on QoS profile of each individual user's subscription information **(Fig. 1:**

HLR); information on status of the individual terminal **(it is well known to one of**

ordinary skill in the art that the status of the individual terminals is stored in

HLRs) ; Immonen discloses information on service agreements between networks

(0078, where Immonen discloses transmission of a profile from a HLR to the

PAC); information on status of the network providing service to the terminal; and

information on policy handling mechanism for QoS management **(0045, where**

Immonen discloses that profiles are stored in the HLR and the usage of each

profile of the customer).

Claim 23, Minde does not explicitly disclose a step where the terminal requests

for a QoS control service during the access control process when the terminal attaches

to a network; a step where the central controller initiates a monitor session when an

access control server informs the central controller of the QoS control service request; a

step where tunnelling channel information is allocated and embedded into the access

control reply by the central controller; and a step where the tunnelling channel

information is received, and the tunnelling channel is set up between the QoS control

module at the terminal and the central controller using this information, whereby

communication channel between the QoS control module in the terminal and the central

controller for performing QoS control is established.

Immonen discloses a step where the terminal requests for a QoS control service

during the access control process when the terminal attaches to a network **(Fig. 2: UE**

request any QoS profile); Immonen discloses a step where the central controller

initiates a monitor session when an access control server informs the central controller

of the QoS control service request **(Fig. 1: UE request via RNC/BTS (not shown) to**

SGSN); Immonen discloses a step where tunnelling channel information is allocated

and embedded into the access control reply by the central controller; and a step where

the tunnelling channel information is received, and the tunnelling channel is set up

between the QoS control module at the terminal and the central controller using this

information **(0054, Fig. 2: activate RT PDP, i.e. packet data protocol activation**

using attributes in the service profile), Immonen discloses whereby communication

channel between the QoS control module in the terminal and the central controller for

performing QoS control is established **(0054, where Immonen discloses PDP**

contexts for data transfer).Therefore, it would have been obvious to one of ordinary

skill in the art at the time the invention was made to modify Minde to use attributes in

service profiles as taught by Immonen so as to set up proper data channels for

communications.

Claim 24, as analyzed with respect to the limitations as discussed in claim 14.

Claim 25, as analyzed with respect to the limitations as discussed in claim 8.

Claim 26, as analyzed with respect to the limitations as discussed in claim 13.

Claim 27, as analyzed with respect to the limitations as discussed in claim 13.

Claim 28, as analyzed with respect to the limitations as discussed in claim 14.

Claim 37, Minde discloses wherein a data format for QoS enforcement

information from the terminal to the central controller includes: message ID to

distinguish the different incoming messages **(Minde inherently discloses message**

Ids); Minde discloses QoS enforcement data that contains parameters associated with

the action ID **(Pg 7: 10-11)**.

Minde does not explicitly disclose an action ID to indicate the action to be carried

out.

In an analogous art, Immonen discloses an action ID to indicate the action to be carried out **(0006, where Immonen discloses THP)**. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Minde to use classification of packets as taught by Immonen so as to decide the priority of the traffic **(0080).**

Claim 38, as analyzed with respect to the limitations as discussed in claim 37.

Claim 39, as analyzed with respect to the limitations as discussed in claims 10 and 13.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MEHMOOD B. KHAN whose telephone number is (571)272-9277. The examiner can normally be reached on Monday - Friday 8:30 am - 5:00 pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lester Kincaid can be reached on 571-272-7922. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic

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/M. B. K./
Examiner, Art Unit 2617

/Lester Kincaid/
Supervisory Patent Examiner, Art Unit 2617